

**Nex Flow™ Introduces The New Super Separator  
removes 99.9% oil and water "guaranteed" with near zero maintenance  
(no replaceable filter elements) and has a 5 year warranty!**

## Specifications



- ▶ New concept – NO filter element (World Patent Pending)
- ▶ Mist removal rate 99.9% (Actual measurements).
- ▶ Oil removal rate 99.9% (Actual measurements).
- ▶ No need for maintenance.
- ▶ **Life cycle is semi-permanent.**
- ▶ The initial performance is maintained at 100%.
- ▶ No performance degradation if the air flow changes.
- ▶ Small and lightweight
- ▶ No external power supply
- ▶ Low price
- ▶ 5-year warranty

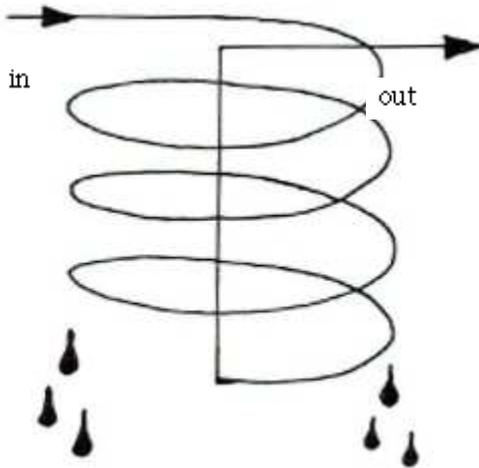
### ■ Summary of Operation and Application.

The Liquid Super Separator is a new concept of air filtration that is totally different from traditional air filters. The Super Separator **has no filter elements**. Yet it is far superior in performance against mist removal filters and even double oil removal filters. With NO filter element to change, it is virtually maintenance-free (except for the rare change of the automatic drain valve). With no filter element to build up resistance and "pressure drop" the **initial performance is maintained 100%** throughout its life.

Despite the use of refrigerated air dryers, moisture still condenses downstream in the compressed air system. Lubricators in the system and leaks can also draw in moisture creating water and oil problems in the system. The mist and vapor can cause performance and corrosion problems in air guns, cylinders, and blow-off products. The Liquid Super Separator does not lower the dew point of the compressed air (that is the responsibility of the air dryer), but it removes vapor and mist perfectly – even fine mist – to 99.9%.

One question arises as to the micron size of the particles removed. While 99.9% liquid water and oil can be guaranteed, if micron size is important, a traditional filter can be added in line downstream of the separator. However, as almost all of the work will be done by the separator it is unlikely the element in the filter will need replacement.

## 1. Basic principle.----- Special centrifugal separation system.



We have achieved the high mist removal rate without changing the filter element by a “ **high-speed centrifugal filtration method with multi-nozzles**” (patent pending), which has been recently developed.

Compressed air rotates at high speed with the stable condition of a rotating center by “**Multi-nozzles**” which are arranged radially. Liquids (such as mist and oil – all liquids) are separated perfectly because the difference of their specific gravity to air is large (approximately 800:1).

Separated water and oil is dropped to the drain section at the bottom by gravity, and then drained automatically by a float type auto. drain supplied.

There is zero change in pressure drop since there is no element necessary for the compressed air to pass through – and the unit remains consistent in performance and virtually maintenance free except for the rare need to change the automatic drain. The performance is so good that even bacteria in a compressed air system is reduced dramatically!!

## 2. Features

- ▶ **NO filter element.**
- ▶ **Mist removal 99.99%**
- ▶ Oil removal rate 99.99%
- ▶ Low pressure(differential pressure) drop across entire unit.
- ▶ **The type is near maintenance-free**
  
- ▶ It is possible control large flows with a compact unit.
- ▶ **Life cycle is semi permanent.**
- ▶ The initial performance is maintained 100% of the time.
- ▶ No performance degradation by changing the air content.
- ▶ Performance is not changed by the amount of mist.
- ▶ Simple designs ensures reliability.
- ▶ Far superior performance against using mist filters(mist separators) and double oil remove filters
- ▶ Bacteria is reduced drastically (but not sterilized).
- ▶ Solenoid valves protected by these units have reliability improved significantly.
- ▶ When used as a pre-filter to a traditional filter with an element, the life cycle of the

element extends three to five times.

- ▶ No need for external power.
- ▶ Small and lightweight and low in cost.
- ▶ In some applications, you can omit the air-dryer and after cooler.

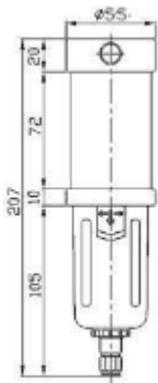
■ Comparison of mist removal performance with existing products.

No	Item	Super Separator	General air filter
1	Principle of mist removal	-Centrifugation method. -High-speed centrifugal filtration method with multi-nozzles with radial design (Without filter element)	-Separating by letting air through the fine holes in a filter element. (Filter element necessary.)
2	Performance of mist (oil) removal	-Mist removal rate 99.9% -Removal and separating of oil is high. -Performance does not change over time. -When the air usage is 100%, the mist removal rate does not change. -Liquid component is 99.9% removed (oil and water).	-Mist removal rate decreases as airflow goes up -As element builds up with contaminant over time, mist removal rate decreases. -Requires special oil filter for oil removal.
3	Pressure loss(differential pressure)	-0 ~ 3.6 psig -Differential pressure does not change over time.	-Differential pressure changes in over time.
4	Maintenance and life	-No need the filter elements, so completely maintenance-free(except the drain valve). -Life cycle is semi permanent. -The initial performance is maintained 100% through its life.	-Filter element is replaced periodically. -Life cycle is not semi permanent. -Performance declines in over time.
5	Filtering	-Using one water separator will remove mist and oil. -Far superior performance against using traditional water removal filters and double oil removal filter.	-You must use a mist filter(such as a water removal filter) and special double oil removal filter.
6	Removal of impurities that are solid particles.	-Removing impurities of solid particles is not the main purpose, but can be reduced significantly.	
7	Bacterial removal performance.	-Fine bacteria reduced drastically (approximately 90~95%, but, not sterilized).	-Fine bacteria cannot be removed.
8	Economic feasibility	-Replacement parts and maintenance cost reduced significantly. -In some applications, you can save the installation cost of air-dryer and after	-Requires filter element change and personnel expense and downtime.

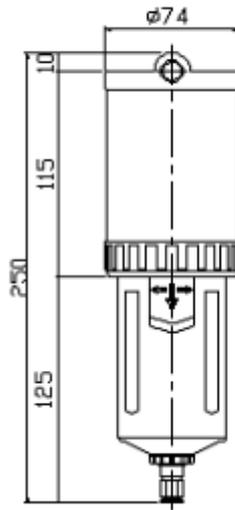
		cooler.	-Always Requires expensive Dryer and after cooler.
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### ■ Specifications.

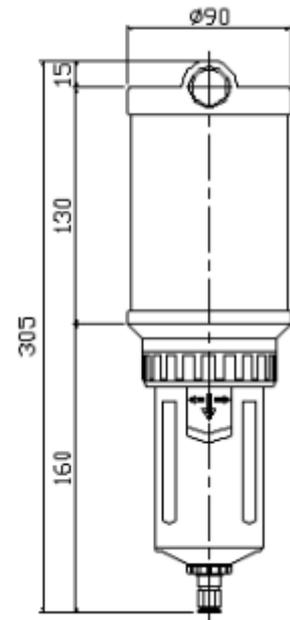
Item	Automatic drain type	NF-200	NF-500	NF-1500
	Max. Flow		9 SCFM	22 SCFM
Pressure loss{Kgf/cm <sup>2</sup> }		0 to 3.6 psig		
Maximum Pressure		140 PSIG		
Fluid temperature(°C)		-20~60 C		
Drain valve type		Automatic type: Automatic drain,		
Pipe connection diameter		NPT-1/4	NPT-1/4	NPT-1/2
Connection diameter drain Outlet (Rc)		Automatic type: Ø1/4" One-touch connecting nipple, M type: Hose connection		
Weight(Kg)		0.40	0.75	1.10
Size(mm)		Ø55×207	Ø74×250	Ø90×305



NF-200

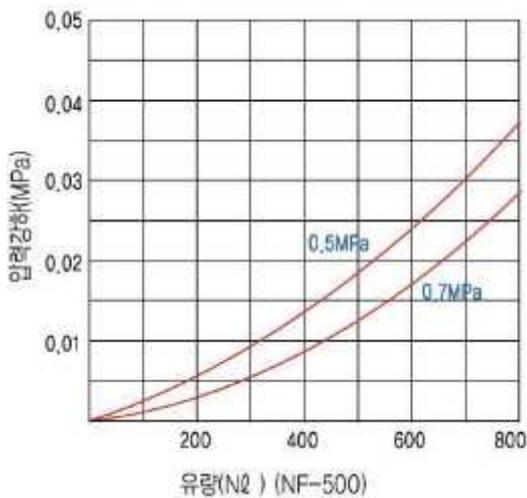


NF-500



NF-1500

\*Automatic drain type is for both manual and automatic use, so in case of emergency you can easily discharge manually.



### ■ Pressure loss(differential pressure) characteristics.

Water separator applied a “ high- speed centrifugal filtration method with multi-nozzles” which we has been developed recently, so it's air passing section is too broad. Therefore Pressure loss is too low for handling flux. It less than 0.25kg/cm<sup>2</sup> within rated flux range.

### ■ Installation.

1. Please Installation vertically for maximum efficiency.
2. Water separator must be installed at the elbow of the last equipment. If the connection pipe length (from water separator to the air operated equipment) is too long, it may cause condensation in the pipes.
3. Please check the direction of flow at the compressed air inlet and outlet.
4. If you use a lubricator, please install the lubricator after the water separator.

**\*In some applications, the air dryer and after-cooler can be omitted.**

● Generally, the final item which needs compressed air is far from the compressor. Thus, it is too difficult remove the mist (and oil) completely using only a dryer as condensation occurs within the pipe due to the length of the pipe.

● The Super Separator removes mist and oil using only one unit at the elbow after the last equipment piece reducing equipment cost as well as maintenance cost.

### ■ Questions and answers about the Super Separator (FAQ).

No.	Question	Answer
1	-Where is it used?	-Just upstream the machine which uses the compressed air.
2	-What equipment can use the Super Separator?	Precision measuring instruments, production facilities, manufacturing equipment, medical devices,
3	-What functions does it have?	-Removing impurities such as mist, oil, dust in pipe, and Keeping the pipes

		clean.
4	-What method does it use?	-Mist is separated and removed by <b>“ high-speed centrifugal filtration with multi-nozzle” design</b> (patent pending).
5	-What is the concept?	-It is not integrated management for humidity control. It removes mist, oil and dust just before the end-use equipment.
6	-Where do I install?	-Not in the compressor room, please install <b>just before</b> each end-use equipment.
7	-What is the reason?	- Condensation occurs downstream caused by temperature difference between the inside and outside of pipe.
8	-Does it remove oil?	-Yes, it does.
9	-How often is maintenance necessary?	-No need for maintenance. except for the automatic drain valve which should be checked
10	-Does it need to be replaced?	- No. Only the automatic drain needs to be checked and replaced if damaged.
11	-If the dew point is extremely low of the compressed air do I need the Super Separator?	-Not necessary normally.
12	-How much is the pressure loss?	-It less than 0~0.25kg/cm <sup>2</sup> (3.6 psi) within rated flow range.
13	-is dust also removed?	-Removal of dust is not the main purpose, but much can be removed.
14	-Is it possible to control humidity?	-No, the Super Separator is not designed to reduce humidity
15	-What if I still experience water or oil in my equipment after the Super Separator?	- Install the separator as close as possible to the air equipment in use. If pipe length (from separator to air equipment) is too long, you may still cause condensation in the pipes.
16	-What is the performance after years of use?	- <b>There are no mechanically moving parts and replacement parts.(Except for the auto drain)</b> So performance is not deteriorated over time.
17	-How long the <b>life cycle</b> ?	-The life cycle is semi permanent. There are no reports of performance degradation to date.
18	-Can I use the Super Separator with existing filters?	-Yes. He Super Separator will extend the filter element life three to five times.
19	-What must I be aware of the pipe which located after the point	-If connection pipe length(from separator to air equipment) is too long,

	where the separator is installed?	it may cause condensation in the pipes. So, install the water separator as close as possible to the air equipment in use.
20	May I install slope the Super Separator on a slope?	Slight inclination or slope is acceptable, but if too large, the performance will be negatively influenced.
21	What if the product is defective?	If the product is initial bad, then there is a free exchange ( <b>5-year warranty</b> , except the drain valve).
22	We now use a water removal filter and oil removal filter in series.. Is the Super Separator?	Using only one separator will provide better performance.
23	How is the price and economic efficiency?	It is typically less initial cost than multiple filters and because it is near maintenance-free operating costs are lower.
24	-How many models?	Depending on flow rate, there are three models at this time. New models are pending.
25	-What material is made of?	-External is all aluminum, stainless interior.
26	-Other precautions necessary?	For very bad liquid problems we recommend installing a standard air filter in front of the water separator to prevent clogging of the drain valve.
27	-Is there a patent?	-It is world patent pending.

## ■ Use of water separator(Examples)

The Super Separator is now widely used in all industrial facilities that use compressed air, examples as follows.

**Painting facility**

**Pharmaceutical company**

**Food manufacturing company**

**Semiconductor manufacturing facility**

**Electronic components manufacturing facility**

**Electronic components assembling facility**

**Shipbuilding**

**Power plant**

**Semiconductor detailed medicine manufacturing**

**Spinning facility**

**Plumbing freezing prevention**

**Precision valve manufacturing**

**Solar cell manufacturing**

**Hydrogen manufacturing**

**Submersible pump manufacturing**

**Food packaging line**

**Semiconductor packaging line**

Precision glass parts  
Furniture painting  
Dryer parts  
Tool manufacturing  
Precision metal working  
Molding manufacturing  
3dimensions measuring  
Beer company  
Machining center  
Spinning line  
Cement manufacturing company  
Styrofoam manufacturing company  
CNC machine tool(especially machining center)  
Flour mill company  
Steelmaking company  
Automobile manufacturer line  
Paper line  
Tool manufacturing company  
Nitrogen manufacturing facility  
GAS manufacturing line  
Wood process line  
Textile company  
Resin treatment company  
Precision catapult  
Stone treatment company  
Dental hospital  
OA equipment manufacturing  
PCB manufacturer line  
Printing company  
Argon gas for test  
Electronic sub assembly manufacturing  
Condenser manufacturing facility  
Railroad car  
Disposal of waste matter company  
Paving machine  
Chemistry facility  
Cosmetics manufacturing facility  
Braun tube manufacturing line  
LCD manufacturing line  
Paint manufacturing company  
Precision press  
Mobile painting equipment  
Silkscreen line  
Precision coating line  
Film manufacturing facility  
High-tension electricity parts manufacturing company  
Ceramic manufacturing facility  
Home appliances painting line  
Toothpaste manufacturing machine  
Ultrasonic waves deposit machine  
Aluminum sheath facility  
Optical instrument manufacturing facility  
Semiconductor manufacturing facility

Medical devices  
Sandblasting machine